

WHAT IS CLAIMED IS:

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1. Furnace carbon black, having a hydrogen (H) content of greater than 4000 ppm, determined by CHN analysis, and a peak integral ratio, determined by inelastic neutron scattering (INS), of non-conjugated H atoms (1250-2000 cm^{-1}) to aromatic and graphitic H atoms (1000-1250 cm^{-1} and 750-1000 cm^{-1}) of less than 1.22.

2. A process for the production of furnace carbon black according to claim 1 in a carbon black reactor which contains, along the axis of the reactor, a combustion zone, a reaction zone and a termination zone, comprising:

10 producing a stream of hot waste gas in the combustion zone by completely burning a fuel in an oxygen-containing gas and passing the waste gas from the combustion zone through the reaction zone into the termination zone,

15 mixing carbon black raw material into the hot waste gas in the reaction zone and stopping carbon black formation in the termination zone by spraying in water,

wherein the carbon black raw material comprises liquid carbon black raw material and gaseous carbon black raw material that are injected at the same point.

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3. A process according to claim 2, wherein the liquid carbon black raw material and the gaseous carbon black raw material are introduced at the same point through a lance.

25 4. A process according to claim 3, wherein the lance comprises spray nozzles.

5. A process for using the furnace carbon black according to claim 1, comprising:

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